

REMARKS

Favorable reconsideration of this application is respectfully requested.

Claims 4, 10, and 6 are herein amended to address the objections noted thereto by clarifying the language noted as grammatically incorrect and to provide clear antecedent basis for all terms.

Claims 1, 3-12, and 13-19 are pending in this application. Claims 2, 13, and 13 are herein canceled without prejudice and new claims 17-19 are added for examination. Applicants submit no new matter is added.

Applicants and applicants' representative wish to thank Examiner Cavallari for the interview granted applicants' representative on October 22, 2008. During that interview the outstanding rejections were discussed in detail. Further, claim amendments to clarify claim features and to address the outstanding rejections were discussed. The presently submitted claims differ from the discussed claim amendments, but are believed to also define over the applied art as discussed below.

Claims 1, 4, 5, 7, 8, 10, 11, and 16 were rejected under 35 U.S.C. § 112, second paragraph. The drawings were objected for informalities. Claims 1, 2, 5, 13, and 14 were rejected under 35 U.S.C. § 102(b) as anticipated by JP 11-178216 to Keizo et al. (herein "Keizo"). Claims 3, 7, and 12 were rejected under 35 U.S.C. § 103(a) as unpatentable over Keizo in view of U.S. Patent 6,753,622 to Oughton, JR. (herein "Oughton"). Claim 4 was rejected under 35 U.S.C. § 103(a) as unpatentable over Keizo, in view of U.S. Patent 5,866,506 to Ozawa.¹ Claim 6 was rejected under 35 U.S.C. § 103(a) as unpatentable over Keizo in view of U.S. Patent 6,034,514 to Sakai. Claim 15 was rejected under 35 U.S.C.

¹ With respect to that rejection of claim 4, applicants note the outstanding rejection cites Ozawa as U.S. Patent 5,866,506. However, U.S. Patent 5,866,506 is not a patent to Ozawa but instead to Tutt et al., and the disclosure in Tutt does not appear at all related to the claimed features, and does not include even a Figure 5B later cited in Ozawa. It appears the Office Action has cited the incorrect reference, and clarification of that basis for the rejection is respectfully requested.

§ 103(a) as unpatentable over Keizo in view of the publication (“Improved single-phase line-interactive UPS”) to Bong-Hwan et al. (herein “Bong-Hwan”). Claims 8-11 and 16 were rejected under 35 U.S.C. § 103(a) as unpatentable over Keizo in view of U.S. Patent 5,786,992 to Vinciarelli et al. (herein “Vinciarelli”). The above-noted rejections are traversed by the present response as now discussed.

Addressing first the rejection of Claims 1, 4, 5, 7, 8, 10, 11, and 16 under 35 U.S.C. § 112, second paragraph, that rejection is traversed by the present response.

Each of the claims is herein amended to no longer recite “said system” and to clarify the connections of the elements that are in series and parallel. The previously recited “system” indicated a power source that obtains AC power from an AC electric power system.

The claims are also herein amended to now consistently refer to a first and second single phase “inverter/rectifier” to be consistent with the disclosure of those elements in the specification.

Claim 4 is herein amended to clarify the language therein and that the output voltage are superimposed “at the load”, as noted in the Office Action.

The claim 5 features particularly directed to a “pseudo-sinusoidal voltage wave”, are also believed to be clear from the specification and thus definite to one of ordinary skill in the art.

More particular, the specification shows for example in Figures 2(a) and 2(b) how a pseudo-sinusoidal voltage wave is generated, and that subject matter is also clearly discussed in the specification at page 7, paragraph [0013]. In view of such disclosures, applicants respectfully submit it is clear to one of ordinary skill in the art the nature of the claimed “pseudo-sinusoidal voltage wave”.

Each of claims 8, 10, 11, and 16 is also herein amended to clarify the language therein objected to as unclear.

In view of the presently submitted claim amendments and foregoing comments, applicants respectfully submit each of the claims is in full compliance with all requirements under 35 U.S.C. § 112, second paragraph.

Addressing now the objection to the drawings, the drawings are believed to be clear.

First, applicants respectfully submit the drawings clearly show the interconnections of the different converters as currently recited in the claims. Further, claim 8 is herein amended to recite the first single phase inverter/rectifier is comprised of a “plurality of inverters/rectifiers connected to each other”, which is believed to clearly shown for example in Figure 8.

In view of the foregoing comments applicants respectfully submit the drawings are in full compliance with all requirements.

Addressing now the above-noted prior art rejections, the claims as currently written are believe to distinguish over the applied art.

According to features clarified in independent claim 1, and with reference to Figure 1 in the present specification as a non-limiting example, a first single phase inverter/rectifier 4 is connected in parallel with a power source 1. Further, first and second single phase inverters/rectifiers 4, 5 are connected so as to be connected in series with each other when the straightforward switch 3 is turned off to supply the electric power to the load by superimposing their output voltages.

Applicants respectfully submit of the currently claimed features are not met by the applied art.

First, with respect to the claimed features that the first single phase inverter/rectifier is connected in parallel with the power source, in contrast to that claimed feature in Keizo the first converter 4 is connected in parallel with the series connection of the power source 1 and the second converter 6, and thus Keizo does not meet or suggest that claim features.

Further, with respect to the features that the first and second single phase inverters/rectifiers are connected so as to be connected in series with each other when the straightforward switch is turned off to supply the electric power to the load by superimposing their output voltages, in contrast to that claimed feature in Keizo only the first converter 4 supplies the voltage to the load 3 when the switch is turned off.

Moreover, no disclosures in Ozawa are believed to cure the above-noted deficiencies in Keizo, particularly as Ozawa is directed to a different technology.

In view of the foregoing comments, amended independent claim 1 as currently written, and thereby also the claims dependent therefrom, are believed to distinguish over the previously applied art.

The present response also adds new independent claim 18 and dependent claim 19 for examination which also are directed to a power supply unit, and independent claim 18 specifically recites:

a DC-DC converter connected between the battery and at least one of said first and second single phase inverter/-rectifiers, wherein the first and second single phase inverter/rectifiers generate output voltages different from each other and are connected so that their output voltages are superimposed on each other.

Each outstanding rejection cites Keizo as a primary reference, but Keizo differs from new claim 18 as written as Keizo does not disclose or suggest the use of any DC-DC converters.

The outstanding rejection cites Oughton to disclose a power supply in which a DC source 20 is connected to an inverter 822 via a DC-DC converter 824.²

In reply to that grounds for rejection applicants submit new claim 18 as written recite features that distinguish over Oughton in view of Keizo. Specifically, in new claim 18 as

² Office Action of September 29, 2008, top of page 9.

written first and second single phase inverters/rectifiers output *different* output voltages. No combination of teachings of Oughton in view of Keizo would suggest to one of ordinary skill in the art generating *different* output voltages.

New dependent claim 19 further recites that the “first single phase in converter/rectifier forms a pseudo-sinusoidal voltage wave...”. Applicants respectfully submit that feature further distinguishes over the applied art.

Moreover, applicants submit no disclosures in any of the further cited references to Ozawa, Sakai, Bong-Hwan, or Vinciarelli cure the above-noted deficiencies of Keizo in view of Oughton.

Applicants also note the present response adds new dependent claim 17 for examination that further recites:

a voltage drop detector to detect if a system voltage from said power source abnormally drops in magnitude, and to open said switch when an abnormal system voltage drop is detected.

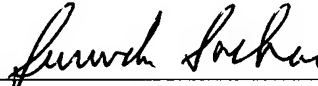
That feature is believed to be clear for example from element 10 in Figure 1 of the present specification, and is believed to further distinguish over the applied art.

In view of the foregoing comments, applicants respectfully submit each of the claims as currently written is allowable over the applied art.

As no other issues are pending in this application, it is respectfully submitted that the present application is now in condition for allowance, and it is hereby respectfully requested that this case be passed to issue.

Respectfully submitted,

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